

NRR-PMDAPEm Resource

From: Grange, Briana
Sent: Tuesday, May 06, 2014 11:37 AM
To: Finfera, Jennifer
Subject: RE: Davis Besse operating license renewal
Attachments: Davis-Besse Assessment of Impacts to Proposed Species 5-6-14.pdf

Hi Jenny,

Per your request, I have attached an assessment for the proposed long-eared bat. In the course of considering the bat, I also identified another proposed species—the red knot—that occurs in the action area. Both species are considered in the attached assessment.

As you will see, I concluded “not likely to adversely affect” for the long-eared bat, but “may affect” for the red knot due to the potential for collision with plant structures. Given the “may affect” conclusion and the fact that the red knot is a proposed species at this time, I am not sure what the appropriate path forward will be. Maybe we can talk after you read the assessment? Thanks,

Briana

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Hearing Identifier: NRR_PMDA
Email Number: 1283

Mail Envelope Properties (Briana.Grange@nrc.gov20140506113700)

Subject: RE: Davis Besse operating license renewal
Sent Date: 5/6/2014 11:37:01 AM
Received Date: 5/6/2014 11:37:00 AM
From: Grange, Briana

Created By: Briana.Grange@nrc.gov

Recipients:
"Finfera, Jennifer" <jennifer_finfera@fws.gov>
Tracking Status: None

Post Office:

Files	Size	Date & Time	
MESSAGE	901	5/6/2014 11:37:00 AM	
Davis-Besse Assessment of Impacts to Proposed Species 5-6-14.pdf			196598

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

**Assessment of Impacts to Proposed Species:
Northern Long-Eared Bat (*Myotis septentrionalis*)
and Red Knot (*Calidris canutus rufa*)**

**Davis-Besse Nuclear Power Station
Proposed License Renewal**

May 2014

Docket Numbers 50-346

**U.S. Nuclear Regulatory Commission
Rockville, Maryland**

Prepared by:

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Assessment of Impacts to Northern Long-Eared Bat from the Proposed Davis Besse Nuclear Station, Unit 1, License Renewal

1.0 Introduction

In February 2014, the U.S. Nuclear Regulatory Commission (NRC) issued its draft Supplement 50 to NUREG-1437, “Generic Environmental Impact Statement for License Renewal of Nuclear Plants” (SEIS), regarding the license renewal of Davis-Besse (NRC 2014a). Sections 2.2.8 and 4.8 of the SEIS included an assessment of whether the proposed license renewal of Davis-Besse Nuclear Station, Unit 1 (Davis-Besse) would adversely affect four Federally listed species: the Indiana bat (*Myotis sodalis*), piping plover (*Charadrius melodus*), eastern prairie fringed orchid (*Piatanthera leucophaea*), and lakeside daisy (*Hymenoxys acaulis* var. *glabra*). The NRC requested concurrence with its effect determinations for these species in a February 27, 2014, letter to the U.S. Fish and Wildlife Service (FWS) (NRC 2014b) as part of consultation under section 7 of the Endangered Species Act (ESA).

During consultation, the FWS identified an additional species—the northern long-eared bat (*Myotis septentrionalis*)—that may occur in the action area. NRC staff also identified the red knot (*Calidris canutus rufa*) as an additional species that may occur in the action area. Both species are proposed for Federal listing, and the FWS may publish final rules listing one or both species before NRC makes a license renewal decision. Thus, consideration of these species in the ongoing section 7 consultation for license renewal is appropriate.

The information contained in this assessment supplements the NRC’s SEIS and will be included in the final SEIS upon publication.

2.0 Description of the Proposed Action

The proposed action (whether to renew the Davis-Besse license for an additional 20 years) remains unchanged. Section 1.1 of the SEIS (NRC 2014a) describes the proposed action in detail.

3.0 Proposed Action Area

The proposed action area remains unchanged. Section 2.2.8.1 of the SEIS (NRC 2014a) describes the action area in detail.

4.0 Species Descriptions

Northern Long-Eared Bat

The FWS published a proposed rule to list the northern long-eared bat as endangered throughout its range on October 2, 2013 (78 FR 61046). The FWS did not propose to designate critical habitat for the species because it found that such habitat is “not determinable at this time.” White nose syndrome, wind energy development, and loss of habitat specifically linked to surface coal mining in prime summer habitat are factors that have contributed to this species’ decline. Unless otherwise cited, the information in this section is derived from the FWS’s listing document (78 FR 61046).

The northern long-eared bat is a medium-sized forest-dwelling bat that is distinguished from other *Myotis* species by its long ears, which average 0.7 in. (17 mm) in length. This bat inhabits 39 states in the eastern and north central United States and all Canadian provinces west to the southern Yukon Territory and eastern British Columbia. Populations tend to be patchily

distributed across its range and are typically composed of small numbers. More than 780 winter hibernacula have been recorded in the United States (3 in Ohio), most of which contain only a few (1 to 3) individuals. Northern long-eared bats are infrequently found in winter hibernacula surveys across the Midwest. The largest population in Ohio includes over 300 individuals and occurs in the southwestern portion of the state in Preble County. In summer, northern long-eared bats are regularly collected as incidental catches during Ohio mist-net surveys for Indiana bats. The FWS recognizes four United States populations. Northern long-eared bats inhabiting Ohio are considered part of the Midwest population.

In summer, bats roost alone or in small colonies under the bark of live or dead trees; in caves or mines; or in man-made structures, such as barns, sheds, and other buildings. The species opportunistically roosts in a variety of trees, including several species of oaks, maples, beech, and pine. Several studies indicate that northern long-eared bats prefer intact, older forests (Cater and Fledhamer 2005; Lacki and Schwierjohann 2001). Henderson et al. (2008) found that the probability of the species being present increases by 1.60 for every increase of 100 ha (250 ac) of deciduous forest. Owen et al. (2003) and Krynak (2010) indicate that northern long-eared bats prefer large, intact upland forest tracts with a higher degree of vertical structure and canopy cover for roosting and foraging compared to other bat species.

Northern long-eared bats forage both in-flight and on the ground and eat a variety of moths, flies, leafhoppers, caddisflies, and beetles. The species breeds from late July to early October, after which time it will migrate to winter hibernacula. Northern long-eared bats are short-distance migrators and will travel 35 to 55 mi (56 to 89 km) from summer roosts to winter hibernacula. Northern long-eared bats will often compose a small number of the bats hibernating in a particular hibernaculum. Other species that commonly occupy the same habitat include the little brown bat (*Myotis lucifugus*), big brown bat (*Eptesicus fuscus*), eastern small-footed bat (*M. leibii*), tri-colored bat (*Perimyotis subflavus*), and Indiana bat.

Hibernating northern long-eared bat females that have mated prior to hibernation will store sperm until spring emergence and give birth to one pup approximately 60 days after fertilization in May or June. Females raise young in maternity colonies of 30 to 60 individuals.

The FWS (2014) indicates that northern long-eared bats' seasonal habitat use in Ohio is as follows:

<u>Season</u>	<u>Dates</u>
Hibernating	Nov 15-Mar 15
Spring staging	Mar 16-May 14
Summer maternity	Apr 1-Sep 30
Fall swarming	Aug 16-Nov 15

The NRC staff did not identify any records or other studies that suggest the occurrence of northern long-eared bats in the action area. The Davis-Besse site (described in Section 2.2.7 of the SEIS) includes 221 ac (89 ha) of land developed for industrial use and 733 ac (297 ha) of freshwater marsh, swamp forest, wet meadows, and small areas of deciduous forest. Based on the northern long-eared bat's preference for larger, intact forest, it is unlikely to regularly inhabit the site. However, the site may provide marginal roosting or foraging habitat. Thus, the NRC staff conservatively assumes that the species may occur in the action area.

Red Knot

The FWS published a proposed rule to list the red knot as threatened throughout its range on September 30, 2013 (78 FR 60023). The proposed rule states that the FWS intends to publish a proposal to designate critical habitat for the species "in the near future;" critical habitat has not

been designated at this time. Loss of breeding and nonbreeding habitat, reduced prey availability, and increasing frequency and severity of asynchronies in the timing of the birds' annual migratory cycle relative to favorable food and weather conditions are factors that have contributed to this species' decline. Unless otherwise cited, the information in this section is derived from the FWS's listing document (78 FR 60023).

The red knot is a medium-sized (9 to 11 in. [23 to 28 cm] in length) shorebird. It migrates annually between its breeding grounds in the Canadian Arctic and several wintering regions, including the Southeastern United States, Northeast Gulf of Mexico, northern Brazil, and Tierra del Fuego off the coast of the southern tip of South America. Between both its spring and fall migrations, the red knot uses key staging and stopover areas to rest and feed.

Red knots live up to 7 years (Niles et al. 2008) and likely begin breeding at 2 years (Harrington 2001). The species breeds in June in inland areas near arctic coasts and nests in dry, slightly elevated tundra areas. Breeding success can vary dramatically from year to year based on weather, food availability (insects and other terrestrial invertebrates), and predator (the arctic lemmings *Dicrostonyx torquatus* and *Lemmus sibericus*) abundance. Little information is available on mating fidelity, but the species is known to return to the same breeding grounds each year and pairs seem to form monogamous bonds throughout the breeding season (Niles et al. 2008). Females lay one clutch of three to four eggs per season. Males and females participate in egg incubation, which lasts for approximately 22 days (Niles et al. 2008). Chicks are born in early July, and the fledgling period lasts 18 days (Niles et al. 2008).

Red knots migrate up to 19,000 mi (30,000 km)—one of the longest migrations known in the animal kingdom—each year, and individuals can undertake flights of several thousand miles without stopping. Stopover habitat most often includes muddy or sandy coastal areas near mouths of bays and estuaries (Niles et al. 2008). In the spring, stopover areas include the Atlantic coast of Argentina, eastern and northern Brazil, the Virginia barrier islands, and the Delaware Bay. Important fall stopover sites include southwest Hudson Bay, James Bay, the St. Lawrence River, the Mingan Archipelago, and the Bay of Fundy, the coasts of Massachusetts and New Jersey, the mouth of the Altamaha River in Georgia, the Caribbean, and the northern coast of South America from Brazil to Guyana. During both migrations, red knots may stopover along the coast of the Great Lakes. During migration, red knots eat bivalves, gastropods, amphipods, and occasionally polychaetes (Niles et al. 2008).

The Black Swamp Bird Observatory (BSBO), located just to the west of the Davis-Besse site, regularly records small numbers of red knots during both spring and fall shorebird migration surveys (see Table 1). BSBO conducts its spring migration survey from March through late November at sites within the Ottawa National Wildlife Refuge complex and surrounding Lake Erie wetlands. The total number of surveyed sites and sample days varies each year, but typically includes 6 to 11 sites and 50 to 250 trips (sample days/sites sampled) per season. Surveys are conducted by vehicle or foot, and shorebird observations are recorded using the International Shorebird Survey protocol. The BSBO's surveys positively indicate that the red knot occurs in the action area.

Table 1. Red Knots Present in Lake Erie Shorebird Migration Surveys, 2003-2010

Year	Number of Individuals Observed	
	Spring Migration	Fall Migration
2003	9	90
2004	55	17
2005	2	28
2006	0	5
2007	1	7
2008	1	8
2009	1	26
2010	0	10

Sources: BSBO 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010

5.0 Effects of Proposed Action

Northern Long-Eared Bat

The proposed license renewal would include continued operation of the site and continued lease of Navarre Marsh to the FWS. During the proposed license renewal term, the applicant (FirstEnergy Nuclear Operating Company (FENOC)) does not plan to perform any construction, ground-disturbing activities, or changes to existing land use conditions in either natural or developed areas.

As part of regular site maintenance, FENOC may need to remove trees that pose a safety concern. Although it is unlikely that FENOC would need to remove trees in the small forested tracts on the site where northern long-eared bats may roost, the NRC conservatively assumes that any tree removal could potentially affect the species if the trees have not been assessed for bat presence or use.

FENOC maintains Environmental Best Management Practices that include measures to ensure that FENOC staff consider and appropriately mitigate impacts to the Indiana bat prior to tree removal. These measures are discussed in Section 4.8.1.3 of the SEIS (NRC 2014a). Due to their similar life history, the NRC staff assumes that these measures would also be protective of the northern long-eared bat. Accordingly, the potential adverse impact created by future tree removals during the proposed license renewal term would be insignificant because it is unlikely to result in a take.

Red Knot

Within the action area, the red knot is most likely to use Lake Erie shoreline habitat within Navarre Marsh. This habitat is leased to the FWS for management as part of the Ottawa National Wildlife Refuge and would continue to be leased to FWS during the proposed license renewal term. Continued protection of this habitat would result in beneficial effects to the species.

It is possible that the red knot could collide with plant structures or transmission lines. Although the NRC determined this impact to be small for birds at all nuclear plants during the license renewal term (NRC 2013a), this impact could uniquely affect the red knot due to its status as potentially threatened. Bird mortality surveys were conducted on the Davis-Besse site in the 1970s, and NRC (2013a) describes the surveys as follows.

At Davis-Besse, extensive surveys for dead birds were conducted from fall 1972 to fall 1979. Early morning surveys at the 152-m-tall (499-ft-tall) cooling tower were made almost daily from mid-April to mid-June and from the first of September to late October. After the tower began operating in the fall of 1976, some dead birds were lost through the water outlets of the tower basin. A total of 1,561 dead birds were found, an average of 195 per year. The dead birds included 1,229 at the cooling tower, 224 around Unit 1 structures, and 108 at the meteorological tower. Most were night-migrating songbirds, particularly wood-warblers (family Parulidae), vireos (*Vireo* spp.), and kinglets (*Regulus* spp.). Waterfowl that were abundant in nearby marshes and ponds suffered little collision mortality. Most collision mortalities at the cooling tower occurred during years when the cooling tower was not well illuminated (1974 to spring 1978). After the completion of Unit 1 structures and installation of many safety lights around the buildings in the fall of 1978, collision mortality was significantly reduced (average of 236 per year from 1974 through 1977, 135 in 1978, and 51 in 1979). This reduction was accomplished by installing low-intensity light sources (1.0 ft-candle or less) to illuminate the cooling tower, which allowed birds to see and avoid it. It appears that the lights at nuclear plants do not confuse birds to the extent that lights on radio or TV towers sometimes do.

No further surveys have been conducted since this time.

Because few shorebirds were observed dead during the 1970s surveys and because the red knot is relatively rare in the action area, the likelihood of red knot individuals colliding with plant structures or transmission lines is unlikely. However, the NRC staff does not believe that it has enough information to determine if these effects would be discountable because information on the species present during the 1970s survey is unavailable and no surveys have been done in more recent years. Thus, the NRC staff conservatively assumes that there is a potential for red knots to collide with plant structures or transmission lines during the proposed license renewal term, and such collisions could result in a take, as defined by the ESA.

All ESA-Protected Species

If an ESA-protected species is observed on the Davis-Besse site by plant personnel, the NRC has measures in place to ensure that it would be notified so that the NRC staff could determine the appropriate course of action, such as possibly reinitiating section 7 consultation under the ESA with the FWS at that time. The NRC's regulations containing notification requirements that necessitate operating nuclear power reactors to report to the NRC within 4 hours "any event or situation, related to...protection of the environment, for which a news release is planned or notification to other government agencies has been or will be made" (10 CFR 50.72(b)(2)(xi)). Such notifications include reports regarding Federally listed species, as described in Section 3.2.12 of NUREG-1022, Event Reporting Guidelines for 10 CFR 50.72 and 50.73 (NRC 2013b). If listed in the future, this reporting requirement would apply to observations of northern long-eared bats and red knots.

6.0 Conclusion and Determination of Effects

Northern Long-Eared Bat

The NRC staff concludes that the proposed license renewal **may affect, but is not likely to adversely affect**, the northern long-eared bat. This determination is the result of the potential for tree removal to affect northern long-eared bat roost. However, FENOC's continued adherence to its Environmental Best Management Practices during the proposed license renewal term would ensure that tree removal does not result in a take of this species.

Red Knot

The NRC staff concludes that the proposed license renewal **may affect** the red knot. This determination is the result of the unlikely, but possible, collision of red knot individuals with plant structures or transmission lines during the proposed license renewal term.

7.0 References

10 CFR Part 50. Code of Federal Regulations, Title 10, Energy, Part 50, "Domestic Licensing of Production and Utilization Facilities."

78 FR 60023. U.S. Fish and Wildlife Service. Endangered and threatened wildlife and plants; proposed threatened status for red knot (*Calidris canutus rufa*). *Federal Register* 78(189):60023-60098. September 30, 2013.

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[NRC] U.S. Nuclear Regulatory Commission. 2014b. Letter from D. Wrona, NRC, to T. Melius, Midwest Regional Director, U.S. Fish and Wildlife Service. Subject: Request for concurrence on the effects of the proposed Davis-Besse license renewal on threatened and endangered species. February 27, 2014. ADAMS Accession No. ML13177A030.

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